Customers within the two trial switches that can currently originate ISDN circuit switched data calls to the portable NXXs will be denied that capability for the duration of the trial. NYT is concerned about the impact this will have on customer service and customer perception of the quality of service. There is currently no acceptable existing or planned solution to this problem.

IIC. Coin Interaction Problems With 3/6/10 Digit TDPs

Like AR, AC and ISDN data calls; coin calls (all calls made from NYT public phones) to portable NXXs in one of the trial switches will ignore the TDP and attempt to complete the call to the ported-from switch, unless the TDP is in the same switch as the call origination, in which case the call will receive a denial treatment. Either way the call will not complete. This is an issue in one of NYT's trial switches. In the other switch coin calls will process normally unless the TDP is in the same switch or if the number is ported, in either case the call will not complete.

IID. Alternative Query Location Problems

The two alternatives in the CPC proposal offered for identifying the query status are not feasible in the NYT network. Nor would they be feasible in any widespread deployment of LNP.

The first alternative is to note the CPC provided, if it is the NYT CPC then it has been queried. This alternative would require sending ten digits to all end office switches in the

network. For maximum efficiency in routing, signaling and call setup timing, NYT sends only seven digits to all end office switches in its network The loss in efficiency and increased trunking requirement are neither practical nor could they possibly be implemented in time for this trial. The network will continue to utilize seven digit signaling. Therefore NYT will not receive the CPC in the end office.

The second alternative is to somehow identify the incoming trunk group as carrying either "queried" or "non-queried" calls. This too is not feasible for this trial. Iteroffice trunking is currently designed to carry all forms of traffic from all types ofinterconnecting carriers: interexchange carriers, competitive local exchange carriers and cellular carriers. This common trunking network is highly efficient. Implementation of separate trunking for portable calls would be inefficient and impractical for this trial.

III. NYT Developmental Requirements

NYT, based on the above implementation plan, has been investigating the capability of providing the CPC functionality with its equipment vendors. So far there is one area where development is required for the switch. That is, switch development for CPC to NPA translation is needed. However, because of the complexity of LNP, the lack of experience with AIN functionality and the limited time NYT has had to investigate the feasibility of the proposed solution, it is possible other requirements will surface.

The two basic additional functionalities required for CPC call processing are as follows: First, participating switches need to have the ability to perform an AIN 0.1 query to the LNP data base based on an NPA-NXX trigger. Although AIN 0.1 is a new technology and is currently in limited deployment in NYT switches, NYT is confident that this functionality will be available in time to satisfy the trial requirements.

Second, participating networks need the ability to route a call based on the 10 digit response received from the LNP database. This need can be further examined from both an interswitch and intraswitch perspective. Since it is standard routing procedure to route a call to a particular trunk group based on the Called Party Number (CedPN) there does not seem to be an issue for interswitch calls. That is, a call from one switch to another or through another can be routed to the proper trunk group based on the CPC and CedPN that results from the database query.

However, call processing is more complicated when the CPC-NXX is within the switch that is routing the call. On intraswitch calls, the query will provide the CPC-NXX that indicates that the call belong to the same switch. The switch must convert the CPC-NXX back to an NPA-NXX to compete the call. A solution to this need is the capability for the LNP data base to send a "Continue" message in response to the query, indicating to the switch that the call was intraswitch. The switch could then process the call normally, but since the response is in the form of CPC-NXX-XXXX, the terminating switch needs the

capability to translate the CPC back to an NPA so that normal translations could be utilized to complete the intraswitch call.

One of the NYT switches participating in the trial does not currently have the ability to translate the CPC to the NPA in the terminating switch. Without this capability the terminating switch will not be able to complete calls to non-ported customers in portable NXXs. This will require software development.

There should be no impact during the trial to existing NYT customers if the additional software is developed and deployed. Without the additional software every call to a non-ported customer in a portable NXX would not complete. In summary, it is likely that the functionality required can be developed by the switch vendor to the level where it would be able to be deployed in a switch serving existing customers. The development timeframe however could potentially impact the trial start date.

IV. Cost & Feasibility Impacts

The following estimates are based on current information on the CPC proposal. Dialogue is continuing with the MCI Metro and the switch vendors to further understand the impacts of the trial. Any new infomation that changes these estimates will be provided as they become available.

IVA. Switch

NYT, along with one of the switch vendors, estimates the overall cost addressing the switch and some AIN development issues will be between $250,000 and $500,000 and will require a 6 to 9 month timeframe for resolution. This cost and timeframe will provide the ability to convert the CPC to an NPA as defined in Section II above and will allow TCAP messages to ignore the TDP as defined in Section IC above in one of the NYT trial switches. (Although NYT does not support the TCAP feature, the vendor indicated that both capabilities would be part of the development effort.)

NYT's equipment vendor has indicated that the cost and timeframe are not firm. Due to the short timeframe NYT was given to provide this information, a more precise estimate is not yet available. As noted above, NYT does not intend to deploy the functionality which allows the TCAP message to ignore the TDP. Therefore, the cost and development timeframe quoted may decrease if this functionality is not purchased, or increase if a better solution is provided and is available from both switch vendors.

It is likely that NYT will be able to provide the switch development required for proper call processing in approximately the trial timeframe. It is, however, not likely that NYT will be able to provide the AIN development required to provide the proper AR & AC feature, data and coin functionality in the trial timeframe. These developments require resolution of standards issues and vendor development beyond the timeframe for this trial.

IVB. Manpower

There is currently no clear definition of the scope and scale of the trial. A Technical Subcommittee has been formed to begin addressing these issues. Currently the quantity of ported customers is unknown, the number and identity of the participating carriers are unknown, the trunk interconnection plan is unknown, signaling load is unknown, etc.. All of these issues will have a major impact on the NYT resources required.

While the issues yet to be resolved by the Technical Subcommittee will impact the manpower resources required, the following is an estimate of the quantity and function of people required and the amount of their time that would be required. This should be considered the minimum requirements.

FUNCTION	NUMBER OF PEOPLE	SPAN OF TIME REQUIRED	PERCENT OF TIME REQUIRED
Eng/Proj Mng - Mgmt	1	18 mon	50%
Carrier Svc/Proj Mng - Mgmt	1	18 mon	50%
Oper/Trans & Mtnc - NonMgmt	2	9 mon	50% - 75%
Oper/Trans & Mtnc - Mgmt	2	9 mon	25%
Carrier Svc/Oper-CLEC Interface - Mgmt	2	9 mon	50% - 75%
Eng/Ntwk Plng - Mgmt	5	9 mon	15%
Eng/Sw Impl - Mgmt	2	9 mon	25%
Eng/Sgnl Impl - Mgmt	1	9 mon	25%
Eng/Trans - Mgmt	2	9 mon	25%
IS/Billing - Mgmt	2	3 mon	15%
IS/OSS - Mgmt	2	6 mon	15%

With regards to the Span of Time Required the following assumptions were made:

- 18 mos. - This would be a person involved since the RFP process began and will continue through the trial and post-trial evaluation.
- 9 mos. - This is a person required for the duration of the trial as well as some time before and after for planning and post-trial resolution.

- 6 mos. /3 mos. - A support person who's required during the 18 month interval but not necessarily the trial months and not necessarily consecutive months.

NYT estimates cost for manpower is $958,000.

IVC. Signaling Hardware

Currently the existing B-links between the NYT STPs (White Plains and 37th St.) and the MCI STPs (Aberdeen, Maryland and West Orange, NJ) are operating above engineered capacity. Additional links will need to be added to accommodate the LNP queries. If MCI decides to increase the link capacity and they are capable of routing the queries to the MCImetro SCP then there should be no additional signaling requirements. However, if the link capacity is not increased, NYT could incur hardware and facilities cost. Since MCImetro has not decided which of its STPs will be used for the trial, the facilities cost cannot be estimated. The cost for the hardware is $28,000.

V. NYT View of the Long Term Viability of the MCImetro Solution

NYT does not believe that the CPC solution is viable as a long term solution for widespread deployment because: (1) it requires switch development to translate a CPC to an NPA and to distinguish a CPC from an NPA, (2) it cannot evolvable to location portability, (3) it does not have an acceptable method for determining the query status of an incoming call to the ported-from switch thus requiring a (potentially unnecessary) query at the ported-from switch, (4) there is no acceptable method for proper routing of

feature associated TCAP messages, and (5) the SCP is limited in its capabilities because it cannot return a "Continue" message or perform GTTs.

The capability of Advanced Intelligent Network (AIN) technology to hold a call in progress while querying a data base for further routing information is clearly the platform from which LNP should be built. However, the triggers and parameters as currently defined are not adaptable to LNP. Standards bodies, such as T1S1, with the support of industry members would need to define and develop the new triggers and parameters.

It has been suggested that Intelligent Network (IN) technology may be better suited for LNP. However, it is more likely that an IN solution will rely on vendor development without standards development. In other words, the switch vendors will be designing the desired functionality from feature definitions provided by its various individual customers as opposed to those provided by an industry standards body. Typically vendor development can be achieved in a shorter timeframe. This may be why it seems to be an attractive solution to some members of the industry. However the "custom" nature of the vendor solutions also tend to be more costly and less flexible as needs evolve, whereas AIN is an emerging technology with uniform standards that is designed to provide carriers greater flexibility in routing, translations and the provisioning of services.

The fact that the CPC designates a carrier, rather than an end office, creates two problems. The first problem is routing inefficiency, simply because a carrier can't identify

the terminating end office of another carrier and therefore will have to deliver calls to the tandem or perform additional translations that are not required today. Solutions for this problem require at least three different vendor developments. NYT has encountered the first one, CPC to NPA translation, in one of its trial switches and it is detailed in section III above. The second development is not an issue for the trial but will become an issue if the CPC solution is deployed on a long term basis. To a telecommunications network, CPCs are indistinguishable from NPAs. For the trial, the committee has decided to use CPCs that are not currently assigned as NPAs. It would only be a matter of time (2-5 years) before CPCs and NPAs start conflicting. At this point switches would require the capability to distinguish a CPC from an NPA and route accordingly. Since this development would be required within the translations tables of the switches it is likely that this would be vendor, rather than standards, development. The third development needs to be done in the ported-to switch. Today, most switches have a limit on the number of NXX codes they can include in their translations tables. One of the trial switches can handle 250 NXX codes. There are potentially 800 NXX codes per NPA. The actual number of assignable NXX codes would, of course, be slightly less. Therefore, as numbers move from provider to provider and switch to switch within an NPA, switches may theoretically need to accommodate this many NXX codes per switch. As the industry grows and the need to open more than 250 NXX codes arises, the switches' translation tables will be incapable of handling this amount of portable NXX codes. A more robust solution would have created both a carrier designation and a network designation that were independent of the actual telephone number.

The second problem is that the CPC proposal is not evolvable to location portability. CPC-NXX routing is no different than NPA-NXX routing once the call is within the service provider's network. That is, routing is based on geography whereas location portability requires that the number be separated from its geographic location.

VI. Conclusion

NYT estimates the total costs for the Company's participation in the New York Local Number Portability Trial utilizing the MCImetro CPC solution to be between $1.2M and $1.5M for which NYT would require cost recovery treatment. These cost involve between $250,000 and $500,000 for switch development for CPC to NPA translation and resolution of AIN problems with Automatic Recall and Automatic Callback feature denial; $958,000 for manpower requirements; and $28,000 for signaling network hardware. The cost of the resolution of AIN problems with ISDN circuit switched data terminations and coin terminations are unknown at this time.

NYT will continue to work in good faith to support the trial, however, we question the long term viability of the MCImetro solution. Assuming the trial participants can successfully address the issues identified above as well as other issues which may surface, NYT believes that the MCImetro solution may work in the planned trial construct with a limited number of switches, NXXs, locations, CLECs, and customers. However it is apparent that this solution cannot be utilized for full scale number portability deployment.

Further, although the trial architecture addresses number portability among service providers and allows CLECs to offer their customers location portability within their service areas, it does not offer such customers the same location portability if they subsequently choose to change service providers. We urge the trial participants to consider the customer's need for true number portability including service and location portability.

APPENDIX D

New York Telephone

A NYNEX Company

Lawrence J. Chu
Director
Regulatory Planning

1095 Avenue of the Americas, Room 3429
New York, New York 10036
Phone (212) 395-1209

July 27, 1995

Mr. Yog Varma
Chief System Planner, Communications Division
State of New York Department of Public Service
Three Empire State Plaza
Albany, NY 12223-1350

Dear Mr. Varma,

During Tuesday's meeting with you and members of your staff, New York Telephone's Tom McGarry elaborated on a number of issues that have surfaced in connection with the Local Number Portability (LNP) trial including:

- The CPC solution does not provide the query status of the call to the ported from switch. This results in additional queries to the data base.
- For one of the trial switches, intra-switch calls from NYT public coin phones to portable NXXs served by that trial switch will not complete.
- Intra-switch ISDN B channel data calls from NYT customers to portable NXXs served by that trial switch will not complete and inter-switch ISDN B channel data calls from NYT customers served by other switches to ported telephone numbers served by a trial switch will not complete.
- Intra-switch Automatic Callback feature activation attempts by NYT customers to the portable NXXs served by a trial switch will be denied and inter-switch Automatic Callback feature activation attempts by NYT customers served by other switches to ported telephone numbers will be disrupted.

- Intra-switch Automatic Recall feature activation attempts by NYT customers to the portable NXXs served by a trial switch will be denied and inter-switch Automatic Recall feature activation attempts by NYT customers served by other switches to ported telephone will be disrupted.
- NYT expressed reservations about the viability of the CPC solution for full scale number portability deployment - New York Telephone believes that the MCImetro solution may ultimately work in the planned trial construct with limited switches, NXXs, locations, CLECs and customers but we continue to question its viability for long term widespread deployment.

These problems are fully discussed in my July 21st letter to Gary Pattenaude. In addition, the New York LNP Trial Technical Subcommittee members are aware of these issues and we intend to provide them with a detailed update at the scheduled August 9th meeting of the subcommittee.

Notwithstanding the issues and reservations stated above, New York Telephone will continue to support the trial effort. However, based on the information available to us at the present time, we recommend that the trial move forward to phase one deployment and that all issues which surface, including those already identified, be addressed in a timely manner. We further recommend that, at the completion of phase one, the committee evaluate the outstanding issues and consider the need for their resolution and the need for any associated switch and/or database development prior to moving forward into phase two.

If you have any questions or comments on this information, please call me on 212-395-1209 or your staff can contact Bill Higgins on 212-395-0904

Sincerely,

APPENDIX E

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

At a session of the Public Service Commission held in the City of Albany on August 23, 1995

COMMISSIONERS PRESENT:

Harold A. Jerry, Jr., Chairman
Lisa Rosenblum
William D. Cotter
John F. O'Mara

CASE 94-C-0095 - Proceeding on Motion of the Commission to Examine Issues Related to the Continuing Provision of Universal Service and to Develop a Framework for the Transition to Competition in the Local Exchange Market.

ORDER AUTHORIZING TRIALS OF
SERVICE PROVIDER NUMBER PORTABILITY
IN MANHATTAN AND ROCHESTER

(Issued and effective September 25, 1995)

BY THE COMMISSION:

Number portability is essential to the development of vigorous local telephone service competition. In March 1995, the Commission directed that a study of the feasibility of a trial of true number portability and of the costs to regulated utilities of participating in the trial be undertaken in this proceeding,[1/] and we also directed Commission staff to report within 150 days the results of the feasibility study. Staff has reported back that it has been involved with ten telecommunications companies in a collaborative process for

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1/ Case 94-C-0095 - Order Requiring Interim Number Portability Directing a Study of the Feasibility of a Trial of True Number Portability and Directing Further Collaboration issued March 8, 1995.

several months to implement a trial of "true" (data-based) number portability in the State. The trial partners issued a Request for Proposal (RFP) on March 24, 1995. (A list of trial partners appears in Appendix I.) Six bids were received, and two vendors were subsequently chosen by the trial partners to participate in the trial. The RFP and the vendor evaluation matrix were created through collaboration of the partners and the full consensus of each. As proposed, the trial will be in two service territories--one vendor (USIntelco and Stratus Computer) will work with Rochester Telephone Corp. (Rochester) and several new entrants and interexchange carriers in Rochester; the other (a consortium of MCI Metro, Nortel, Tandem Computers, and DSC Communications) will work with New York Telephone Company (NYT) and other new entrants and interexchange carriers in Manhattan.

The proposed trial is scheduled to begin on February 1, 1996 and run for 6 months. Local exchange carriers (other than Rochester and NYT), interexchange carriers, and cellular carriers would have two weeks after the issuance of this order to notify the Secretary as to whether they would participate. The trial will be conducted in three phases:[1/]

Phase I: The first phase will use unassigned central office codes in Manhattan and Rochester. These codes will be divided by line number among the trial participants. The numbers will be ported between participating carriers and test calls will be placed to demonstrate the functionality of the database platform.

Phase II: The second phase of the trial will utilize central office codes currently in use.[2/] Line numbers for administrative offices of the trial participants which reside in

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1/ Actual test plans are now being developed by both the Manhattan and Rochester trial teams.

2/ The East 56th (NXXs 935 and 318) and East 37th Street (NXXs 210 and 922) offices have been chosen for Manhattan while the Stone Street office (NXXs 987, 262, and 325) has been chosen for Rochester.

the trial central offices will be ported between carriers and the processing of normal traffic will be evaluated.

Phase III: The third phase of the trial will test the platform with customers. The trial participants' customers, who at the time of the trial are assigned line numbers out of trial central office codes, will be given the option of converting from the interim number portability solution that they currently use (e.g., Remote Call Forwarding) to the number portability database solution. The trial participants propose that at the end of the trial, customers who elected to participate will be converted back to their previous arrangement.

ISSUES RAISED

NYT and Rochester Comments

NYT submitted comments noting that, although it is committed to the trial, some technical shortcomings have been discovered which may affect the trial and the possible long-term implementation of number portability. Specifically, NYT states that it has identified some technical difficulties associated with feature interaction using the MCI Metro approach as currently proposed, which NYT believes may not be resolved before the start of the trial. These difficulties include a customer's inability to use Call Return and Auto ReDial to reach ported numbers, the inability of calls from public pay phones to be completed to customers in the test central office codes, and the inability to place ISDN data calls to the trial offices. MCI Metro believes that a series of proposed temporary measures would alleviate many, if not all of these problems, and it and NYT are working to resolve them more permanently. NYT is also concerned that the trial platform will not allow migration to geographic number portability.

Rochester also submitted comments regarding technical problems relating to the conduct of a trial in its service territory, including calls to the trial offices interacting with Centrex and Direct Inward Dialing trunks (DID) and calls that are

Operator-handled (0+, 0-). The problems identified by Rochester are similar to those identified by NYT in that these features and classes of services do not interact with an Advanced Intelligent Network (AIN) trigger. The vendor has proposed solutions to some of these problems, but because Rochester believes these short-term measures would not be part of any long-term solution, it questions what purpose they can serve in an analysis of long-term viability of number portability. Because of these technical problems, Rochester is concerned about the impact on customers not involved in the trial and is less optimistic than the vendor that the technical problems can be remedied by the trial start date.

In addition to the technical problems, Rochester also questions the purpose of testing the USIntelco database solution since it is already being tested in Seattle[1/]. Rochester does not believe any additional relevant information not available from the Seattle trial will become available in New York. Finally, Rochester states that number portability is a national effort and it would prefer to yield to the Federal Communications Commission's (FCC)[2/] number portability rulemaking proceeding.[3/]

None of these comments provides a reason to delay this trial. Not all of the technical parameters can be expected to be fully worked out before the trial begins. While it is possible that neither the MCI Metro nor the USIntelco/Stratus solutions will turn out to be the perfect long-term solution to the issue of number portability, one of the purposes of the trial is to test assumptions and collect real data outside a laboratory

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1/ USIntelco and Stratus Computer in conjunction with Electric Lightwave, a competitive local exchange carrier, are conducting a trial in the Seattle area.

2/ FCC Docket No. 95-116.

3/ Although Rochester informed staff on August 7, 1995, that it can no longer support the trial, the company later said that it will continue to work with all parties to develop a trial arrangement that is more suitable for the Rochester area and protects the integrity of the network.

setting. This data will contribute to our body of knowledge of what will make local number portability viable in the long run. For example, the technical questions raised by NYT and Rochester are an indication of the specific issues regarding deployment of AIN which must be addressed by the various switch manufacturers. Solutions to these technical issues should lead to the switching standards modifications necessary to make local number portability work. We will direct staff, in consultation with the trial partners, to report by January 1, 1996, on the progress that has been made in resolution of these technical issues. We expect all trial partners to cooperate fully in this effort and timely submit their comments to staff. The report should include the steps being taken to ensure that service to non-trial customers is not adversely affected during the trial, as well as a discussion of long-term number portability approaches and the relevant context of the proposed trial within that framework.

Rochester is wrong to suggest that the USIntelco trial in New York duplicates the Seattle trial. The two trials are not sufficiently similar to justify such concerns. Moreover, the Rochester trial will involve a much broader range of industry participants such as interexchange carriers and cellular carriers, whereas in Seattle the only participants are LECs.

Rochester has recommended that starting the trials await the conclusion of the FCC's rulemaking proceeding. True number portability is integral to the development of competition in the local service market and, if the proposed trials will serve to advance competition in New York, they must move ahead. It should be noted that the FCC proceeding is designed to gather information.[1/] The Notice of Proposed Rulemaking, in fact, recognizes that state regulators have legitimate interests in the development of number portability and encourages individual state

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1/ The FCC has asked for information on all forms of number portability, geographic location portability, service provider portability, interim portability (call forwarding, etc.), and 500 and 900 service code portability.

trials because they will provide empirical evidence and other relevant information.

Cost Recovery

NYT and Rochester both believe their continued participation in the actual trial should be contingent upon a Commission determination that the costs of the trials are recoverable under their respective regulatory incentive plans. Both the Rochester Open Market Plan (OMP) and NYT's Performance Regulatory Plan contain provisions related to long-term number portability. In both cases, the development of a long-term number portability solution is an integral part of each company's overall incentive plan.

Rochester has asked for a determination of how these costs, which it deems to be exogenous, could be recovered under the OMP. Under the terms of the OMP, however, no provision is made for recovery of exogenous costs, nor is the company allowed to defer such costs. Thus, there is no need for a mechanism by which Rochester can recover these costs.

NYT also raised the issue of cost recovery treatment. As part of its Performance Regulatory Plan, NYT is entitled to recover exogenous cost changes, including increases resulting from Commission mandates. Inasmuch as detailed cost information will not be available until the conclusion of the trial, however, the trial should proceed based on the preliminary cost estimates provided by NYT and Rochester.[1/] The issue of whether and how trial costs should be recovered by NYT can be finally decided after the results of the trial are known, and actual rather than estimated costs have been calculated.

1/ Rochester has estimated its trial costs to be $782,000. NYT has estimated its trial costs to be between $1.25 to $1.5 million.

CONCLUSION

A solid trial framework, based on industry consensus, has been proposed and will be approved, subject to modification after review of Staff's report on the resolution of technical issues. The trial participants are authorized to proceed with the trial.

The Commission Orders:

1. A three-phase number portability trial substantially in the form submitted for Commission review is authorized to begin on February 1, 1996, except as it may be modified after review of staff's report described in order clause 4.

2. New York Telephone Company and Rochester Telephone Corp. are directed to continue to participate in and support the trial.

3. Other local exchange, interexchange, and cellular carriers are directed to choose whether to participate in the trial and to notify the Secretary of their decision within two weeks after the issuance of this order.

4. Staff, in consultation with the trial participants, is directed to report by January 1, 1996, on the resolution of any remaining technical issues. The report should address the long-term viability of the number portability approach and include the steps being taken to ensure that service to non-trial customers will not be adversely affected during the trial.

5. Staff, in consultation with the trial participants, is directed to submit a detailed report on the trial results within three months after the conclusion of the six-month trial. The report shall include broad-gauge cost estimates that could be used to determine the cost of deploying database technology to accomplish service provider number portability statewide.

6. New York Telephone Company shall submit, within three months of the conclusion of the trial, the actual costs incurred for the conduct of the trial to permit a further evaluation of the cost recovery issues.

7. This proceeding is continued.

By the Commission,

(Signed) JOHN C. CRARY
Secretary

Appendix I

LIST OF TRIAL PARTNERS

MANHATTAN TRIAL

AT&T
LOCATE
MCI
MFS Intelenet, Inc.
New York Telephone
Sprint
TCG Communications
Time-Warner Communications

Vendor: Consortium of MCI Metro, Siemens Computer, Nortel, and DSC Communications

ROCHESTER TRIAL

AT&T
Cellular One/Genessee Telephone Company
MCI
MFS Intelenet, Inc.
Rochester Telephone Corporation
Sprint
Time-Warner Communications

Vendor: USIntelco and Stratus Computer